and Kennedy which concluded the booklet and revealed little progress in this much researched area. Possibly the author(s) concerned did not make the deadline?

Of course this volume, like many Elsevier publications, is far too expensive to buy personally, but it is well worth a visit in the library – that is if your library can still afford to take BBA at £3051 per annum.

C.J. Chesterton

The Molecular Biology of Alzheimer's Disease; Edited by Caleb E. Finch and Peter Davies; Cold Spring Harbor Laboratory; Cold Spring Harbor, New York, 1988; xii + 197 pages; $25.00 (paperbook)

'The Molecular Biology of Alzheimer's Disease' is the latest in the series Current Communications in Molecular Biology published by Cold Spring Harbor Laboratory. This volume of less than 200 pages is based on the proceedings of the Banbury meeting held in 1988 and covers the current state of understanding of Alzheimer's Disease at the molecular level.

Alzheimer's Disease (AD) is a brain-specific disease that results in severe cognitive impairment and is characterized by an abundance of neuritic plaques and neurofibrillary tangles and the selective degeneration of nerve cells located mainly in the cerebral cortex and hippocampus. The condition, its possible causes and physiochemical manifestations are summarized in 30 short chapters grouped into 7 major themes; (i) the molecular biology of the amyloid fibril percursor protein, (ii) the characterization of paired helical filaments, (iii) animal models and species specificity for AD, (iv) regional specificity of the pathology, (v) degeneration and neuroplasticity, (vi) non-neuronal involvement in AD pathology, and (vii) genetics of AD. Molecular handles for the study of AD are the accumulation of A4 protein and neurofibrillary tangles, and a major proportion of the book concerns the role of the A4, or beta protein, in AD. Possible explanations of the accumulation of the protein fragment are discussed in relation to the fact that the same protein is found abundantly in Down's syndrome brain (trisomy 21) and the gene for the A4 precursor is located on chromosome 21. The presence of paired helical filaments may be a further example of the accumulation of aberrant polypeptides particularly as they appear to be flagged for potential destruction by their conjugation with ubiquitin. Gene dosage, control of gene expression and protein catabolism are areas probed as causative factors for these changes in brain protein biochemistry. The presence of a protease inhibitor sequence on the A4 precursor is suggestive that proteolytic functions may be important in AD. Scrapie with the 'infective' protein or prion and mouse trisomy 16 are presented as possible models of neurodegeneration. However it remains to be clarified whether the accumulated aberrant polypeptides so characteristic of neurodegeneration are the direct causal agents of AD, or whether these apparently incompletely degraded polypeptides are non-pathological symptoms of an unidentified neurotoxic factor which also provokes their accumulation.

A.R. Hipkiss

Transmembrane Signalling, Intracellular Messengers and Implications for Drug Development; Edited by Stefan R. Nahorski; John Wiley, Chichester, 1990; xvi + 248 pages; £39.50

As an overfrequent participant at scientific meetings, I do not care to have the repayment of my fare or accomodation being made conditional on the delivery of a script. I sense that many others who delight in presenting their work and ideas for discussion at meetings share my dissatisfaction with a form of publication which is generally inaccessible to most readers (i.e. rarely do these appear in a sequence of a serial publication), almost invariably out of date (two years is not unusual) and very expensive. There are exceptions of course and on occasion I have been happy to arrive at important meetings or exotic places with my ticket underwritten by a paper. Similarly, I can imagine most of those invited to speak at the annual Biological Council Symposium on Drug Action in the Spring of 1989 were also happy to arrive, script in hand. The reason for this is that the meeting was held in the magnificent 18th century lecture theatre at the Royal Institution near Piccadilly in London, made famous in earlier times by such as Humphrey Davy, Michael Faraday and John ('Blue Sky') Tyndall (and which should not to be confused with the Royal Society whose facilities pale in comparison).

So, what have we got? The volume at just under 250 pages comprises 14 chapters and encompasses most of the main areas of interest expressed in the title. Mainly this means the mechanisms by which the concentrations of cyclic AMP and Ca^{2+} inside cells are regulated and appropriately the consideration of subsequent events (e.g. regulation of protein phosphorylation and dephosphorylation) is excluded. There is nothing on retinal transduction and there are a few other obvious omissions. A number of leading laboratories are represented by authorship and doubtless anyone working in the area will find something of interest. More than this, a number of the chapters are well introduced with nice historical sections (e.g. Regan, Caron and Lefkowitz on adrenergic receptors, Buckley on muscarinic receptors). At a time when all is being swept aside by cloning techniques, I suspect that these introductory words will have more staying power than anything else and in this respect the articles will serve those students who require a historical background. The best

chapters are those which concentrate on ideas even if these are reiterations of previous statements. Thus, Bar-Sinai et al. consider the regulation of adenylyl cyclase and (yet again) challenge the idea that G_i necessarily dissociates and that only then does α_i interact with and activate the catalytic unit. This is an argument which seems to have evaded the textbooks but that doesn't mean that it should be allowed to disappear. Peter Cobbold and his colleagues present an extensive review of their data on Ca^{2+} oscillations and consider a proposal for the mechanisms by which these are regulated. Another article which I have enjoyed is that by Sophie Loterstajn and (many) colleagues which concerns the question of hormonal control of plasma membrane Ca^{2+} pumps. Possibly my appreciation here is conditioned by the relative obscurity of this topic compared with most of the articles which cover the familiar ground of receptors, G-proteins, ion channels, inositide metabolism etc.

Although at about 18 months, the volume has appeared more rapidly than many of its ilk, as far as I can tell, almost everything that is offered in these pages has long since appeared in print in the journal articles in which science is properly reported. Though I would not deny that I am quite happy to be the possessor of this book, I certainly would not have purchased a copy: in my opinion, along with most collections of this kind, it is almost useless.

I have an idea (not new). In the belief that compilations of related articles initially presented as papers at meetings might have a place in the scientific literature, and the understanding that book sales can help in the financing of such occasions, the reports should be presented in specialised single issues of second line journals. Simultaneously the compilation should be presented as a book volume for individual purchase. In this way I believe that with the disciplined routines of journal production the articles could appear within a reasonable time (6-8 months); they would be easily accessible (as a part of a journal sequence); and available in the bookshop to those with a specialised interest. A prominent publisher tells me that this has been tried, but failed. The reason is that the librarians do not like to see the same books stashed away on different shelves. Maybe they get confused. I think that simultaneous publication of meeting articles in journals and book volumes is worth another try.

B.D. Gomperts

The Plant Plasma Membrane; Edited by C. Larsson and I.M. Moller; Springer-Verlag; Berlin, Heidelberg, 1990; x + 418 pages; DM 248.00

Let me say right from the very beginning that this new book gives a most comprehensive and up-to-date coverage of the structure, function and molecular biology of the plasma membrane of plants. The editors must be congratulated for bringing together sixteen first class contributions. My enthusiasm for this book probably stems from the fact that I started my scientific career twenty-five years ago by studying the ion transport properties of the plasma membrane of the green unicellular alga *Chlorella pyrenoidosa*. As the editors of this book state in their preamble, in those days most studies on the cell membranes of plants were restricted to in situ measurements using the electron microscope to investigate structure and radioisotopes to assay transmembrane fluxes of ions and metabolites. Today of course the powerful techniques of biochemistry, molecular biology and electrophysiology have played a key role in the advance of our understanding of biological membranes. For me reading through the various chapters was a joy and my impression is that those actively working on the plant cell plasmalemma can hold their heads up high when exposed to their counterparts working on the membranes of animal cells. The book seems to cover every topic which one associates with membrane physiology. Not only did I find the expected chapters on ATPases, transport, electrophysiology (including patch-clamping), and techniques (isolation and purification, cytochemistry etc) but unexpected accounts of subjects such as coated pits, endocytosis, cytoskeleton, secondary signalling, acclimation to stress (chilling, freezing) host-pathogen interactions and symbiosis (e.g. rhizobium-legume). Despite the wealth of information given in these various chapters there is still a long way to go before we have a complete picture of the structure and function of the plasma membrane of plants. This point is made in the last chapter of the book written by P. Kjellbom, J. Chory and C.J. Lamb in which they give their perspective of what advances can be expected in the next few years by the increased application of the techniques of molecular biology.

All in all the sixteen contributions add up to an excellent book which I thoroughly recommend to all those working in the plant membrane area and to those who teach advanced courses in plant physiology.

J Barber

Ionizing Radiation Damage to DNA: Molecular Aspects; Edited by S.S. Wallace and R.B. Painter; Wiley-Liss; New York, 1990; xx + 331 pages; $98

This book reports the proceedings of a meeting of the Radiation Research Society, held in the beautiful surroundings of Lake Tahoe, California, in January 1990. It has thus been published commendably quickly, presumably because of the use of camera-ready manuscripts. The meeting was claimed to be the first molecular biology conference exclusively devoted to problems related to ionizing radiation damage and its repair.